

**Claims**

1. Method for monitoring at least two people carrying out a time-limited activity using an external respiratory supply, especially people carrying breathing equipment like firemen, divers or the like, in which method filling levels of breathing devices, particularly compressed air bottles, supplying said people with respiratory air are detected and transmitted to a control center for monitoring before said people make their way to the operation area, in which said people transmit to the control center a signal indicating their arrival in the operation area, which signal serves for computing the time interval between the time of arrival and the beginning of consuming respiratory air from the breathing device, and in which the time spent in the operation area is calculated according to the formula:

$$t_{\text{work}} = \frac{V_{\text{respiratory air min}} - t_{\text{advance}} - (t_{\text{advance}} \cdot \alpha)}{dQ}$$

wherein:

$t_{\text{work}}$	=	the time spent in the operation area
$t_{\text{advance}}$	=	the time needed for the way to the operation area
$\alpha$	=	safety factor
$V_{\text{respiratory air min}}$	=	respiratory air supply in the breathing device having the smallest supply
$dQ$	=	average respiratory air consumption per unit time;

and in which said control center transmits a signal to the people when the point of time for safe withdrawal from the operation area is reached.

2. Method according to claim 1,  
characterized in  
that the exchange of data takes place via radiotelephones.
3. Method according to claim 1,  
characterized in  
that the data are exchanged and transmitted as data telegrams.
4. Method according to claim 1,  
characterized in  
that the data are transmitted in dependence and/or under transmission of  
an identification of the individual breathing devices.
5. Method according to claim 1,  
characterized in  
that the control center for monitoring first detects the respiratory air supply  
in the breathing device with the smallest supply at the beginning of  
the operation and thereafter the respiratory air supply in this breathing  
device at the time of arriving in the operation area, and that the difference  
from these parameters is used for computing the time that can be spent  
in the operation area.
6. Method according to claim 1,  
characterized in  
that the computation of the individual times is effected in a computer-as-  
sisted fashion.
7. Method according to claim 1,  
characterized in  
that the termination of the time spent in the operation area is displayed  
as an acoustical and/or visual signal.

8. Method according to claim 1,  
characterized in  
that the signals and/or data to be transmitted are transmitted automatically, i.e. independently of people.
9. Device for monitoring at least two people carrying out a time-limited activity using an external respiratory air supply, especially people carrying breathing equipment like firemen, divers or the like, for carrying out the method according to any one of the claims 1 to 8, comprising a collection unit (1) for the collection and evaluation of data which are received from the mobile units (2) assigned to the individual persons, wherein at least one mobile unit (2) includes a means (3) for setting and transmitting data sets representative of an respiratory air supply, which data set may be transmitted from said mobile unit (2) to said collection unit (1), said mobile unit (2) having an output device (15, 16) for displaying the point of time of withdrawal from the operation area, which output device may be activated through said collection unit (1).
10. Device according to claim 9,  
characterized in  
that said mobile unit (2) is connected to a breathing device via a transducer (9).
11. Device according to claim 9,  
characterized in  
that said mobile unit (2) includes an operating and/or displaying element (21) which serves for inputting data and for displaying data.
12. Device according to claim 9,  
characterized in

that said mobile unit (2) is connected to a localisation device, for example a GPS transmitter.

13. Device according to claim 9,

**c h a r a c t e r i z e d i n**

that the collection unit (1), the mobile units (2) and/or the device (3) for setting and transmitting data sets representative of a respiratory air supply include housings (13, 37) which are formed explosion-protected and which preferably consist of metal.